

## ABSTRACT

Provided are a cathode material capable of improving battery characteristics by improving its structural stability, a method of manufacturing the cathode material, and a battery using the cathode material. A cathode comprises a complex oxide represented by  $\text{Li}_a\text{Mn}_b\text{Cr}_c\text{Al}_{1-b-c}\text{O}_d$  or  $\text{Li}_{1+e}(\text{Mn}_f\text{Cr}_g\text{M}_{1-f-g})_{1-e}\text{O}_h$ . The values of a through h are within a range of  $1.0 < a < 1.6$ ,  $0.5 < b + c < 1$ ,  $1.8 < d < 2.5$ ,  $0 < e < 0.4$ ,  $0.2 < f < 0.5$ ,  $0.3 < g < 1$ ,  $f + g < 1$  and  $1.8 < h < 2.5$ , and M is at least one kind selected from the group consisting of Ti, Mg and Al. The crystalline structure can be stabilized by Ti, Mg or Al, and charge-discharge cycle characteristics can be improved. Moreover, the charge capacity can be improved by an excessive amount of lithium, and even after charge, a certain amount of lithium remains in the crystalline structure, so the stability of the crystalline structure can be further improved.